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Indian Standard

SPECIFICATION FOR SOUNDING PIPES

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INDIAN STANDARDS INSTITUTION

MANAK BHAVAN, 9 BHADUR SHAH ZAFAR MARG

NEW DELHI 110002

Indian Standard

SPECIFICATION FOR SOUNDING PIPES

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Indian Standard

SPECIFICATION FOR SOUNDING PIPES

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 3 March 1967, after the draft finalized by the Marine Engineering and Shipbuilding Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 It is necessary to sound the level of various double bottom tanks, deep tanks and bilges regularly on ships both out at sea and in port. In the case of double bottom tanks in way of the cargo holds, the sounding pipes have to be brought up to the uppermost deck. Further, tank sounding devices and sounding pipes are covered both by Statutory Rules and by the Classification Society's Rules.

0.3 A guide for selection and installation of sounding pipes on board ships is given in Appendix A.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS: 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the requirements and dimensions for various sounding pipes on board ships.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definition shall apply.

2.1 Sounding Pipes — Sounding pipes are devices used on board ships to assess or measure or both, the contents of the liquids in tanks, bilges, etc.

3. MATERIAL

3.1 The sounding pipes shall be of heavy quality conforming to IS:1239-1964†. All sounding pipes and fittings shall be coated with suitable material

*Rules for rounding off numerical values (*revised*).

†Specification for mild steel tubes and tubulars (*revised*).

to prevent corrosion. Where the pipes are not in contact with fuel oil or cargo oil, the pipes may be galvanized on completion.

3.2 The self closing cock with parallel plug fitted to head of sounding pipe shall be of brass or closed grain cast iron.

4. DIMENSIONS

4.1 The general assembly of sounding pipes is given in Fig. 1.

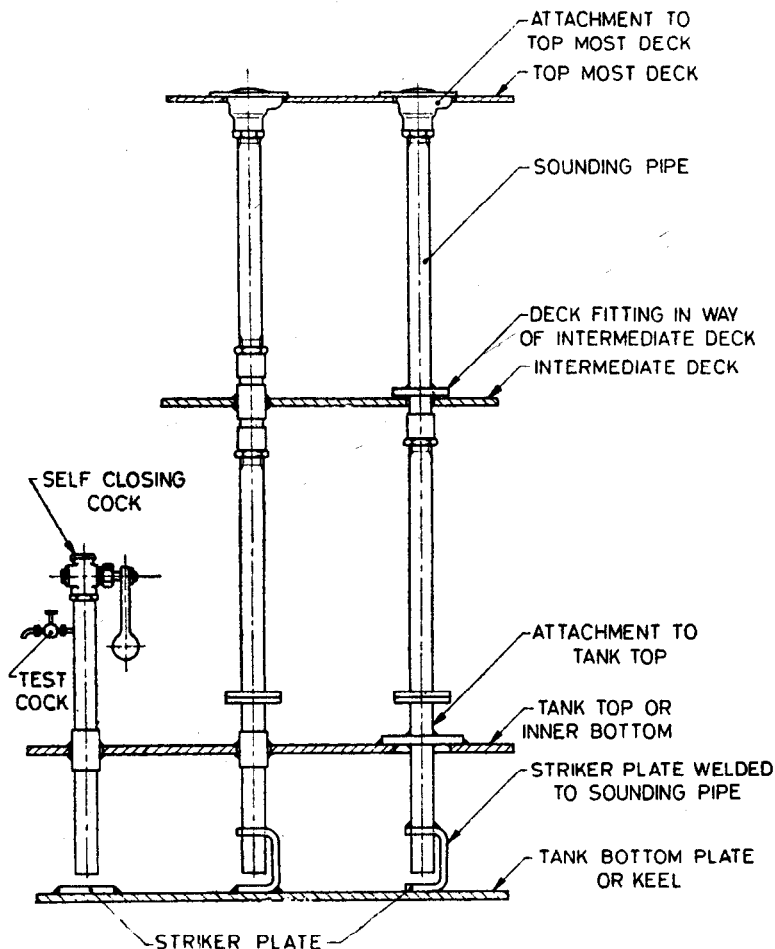


FIG. 1 GENERAL ASSEMBLY OF SOUNDING PIPES

4.2 The method of fitting of flush deck fittings with pilfer-proof cap to the head of sounding pipe is given in Fig. 2.

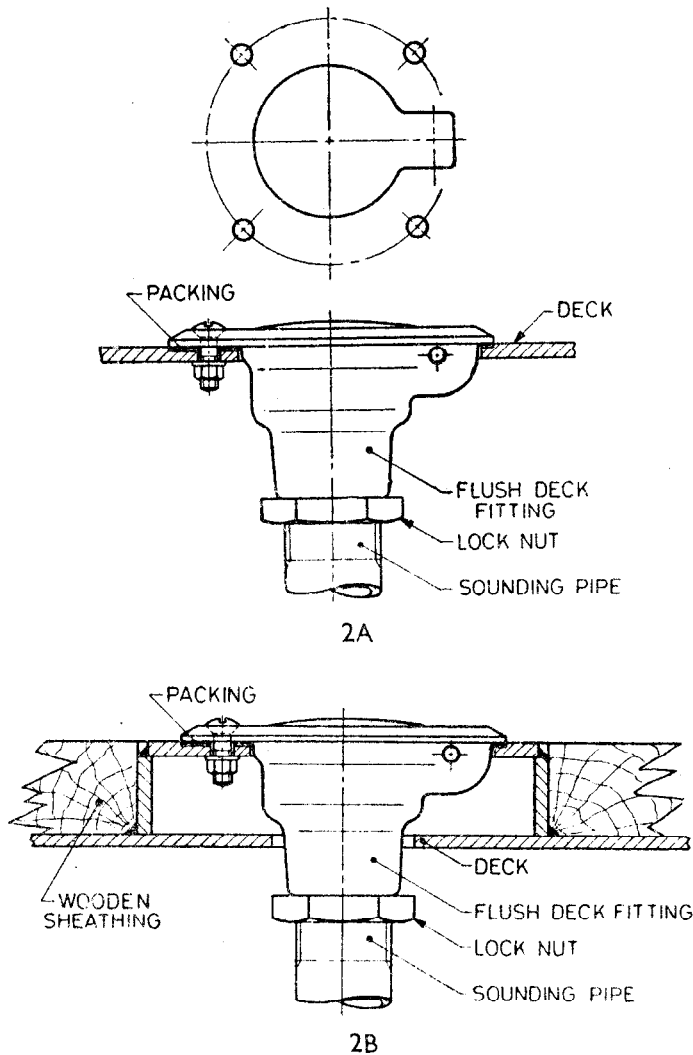


FIG. 2 METHOD OF FITTING OF FLUSH DECK FITTINGS WITH PILFER-PROOF CAP TO HEAD OF SOUNDING PIPE

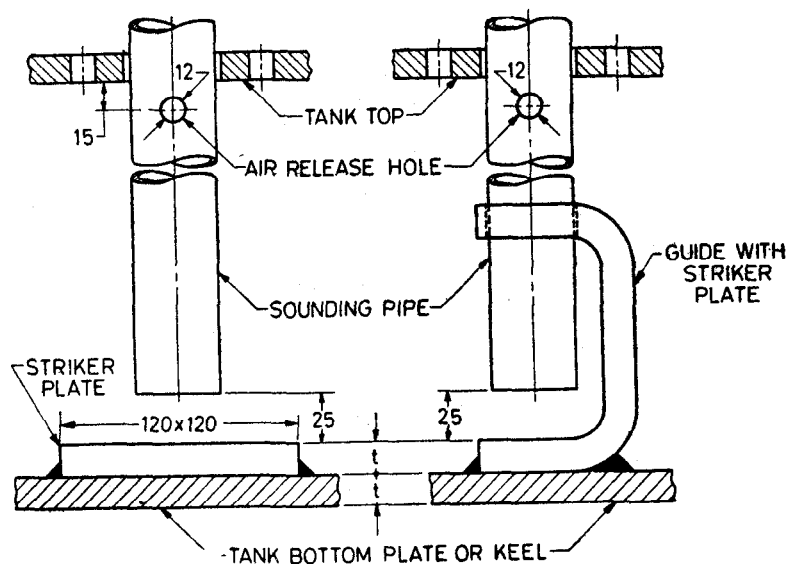
4.3 The details of sounding pipe head in way of bulk head deck and machinery space shall be as given in Table 1. The hexagonal head for the screwed cap shall be of substantial size.

4.3.1 The height of sounding pipes above the deck shall depend on the space in which the sounding pipe end is situated.

4.4 The details of sounding pipe attachment in way of intermediate deck shall be as given in Table 2.

4.5 The details of sounding pipe attachment in way of deck or tank top shall be as given in Table 3.

4.6 The details of sounding pipe in way of tank with details of striker plate shall be as given in Fig. 3.



All dimensions in millimetres.

FIG. 3 DETAIL OF SOUNDING PIPE IN WAY OF TANK WITH DETAIL OF STRIKER PLATES

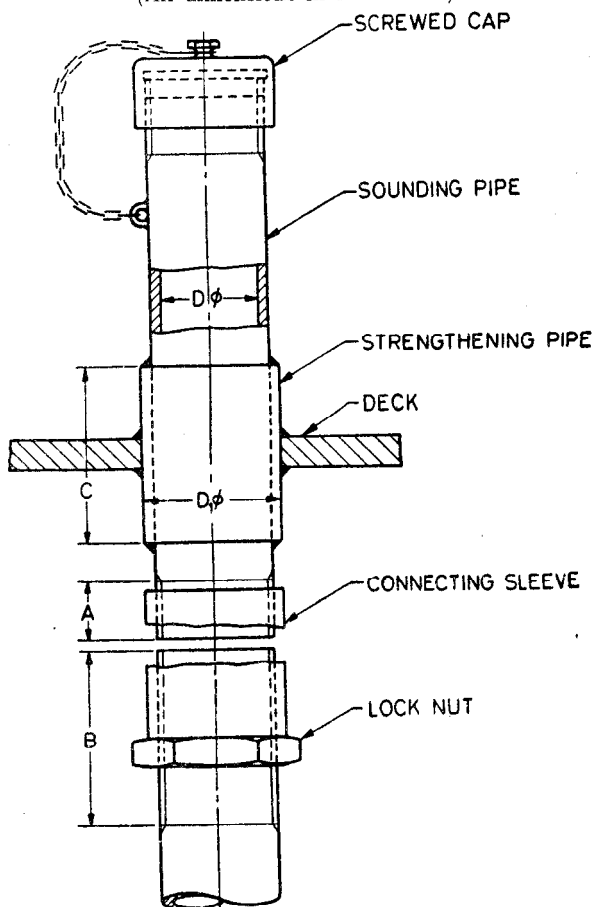
4.7 The details of striker plates with guide shall be as given in Fig. 4.

4.8 The details of perforated sounding pipes with close end shall be as given in Fig. 5.

TABLE 1 DETAILS OF SOUNDING PIPE HEAD IN WAY OF BULK HEAD DECK AND MACHINERY SPACE

(Clause 4.3)

(All dimensions in millimetres)

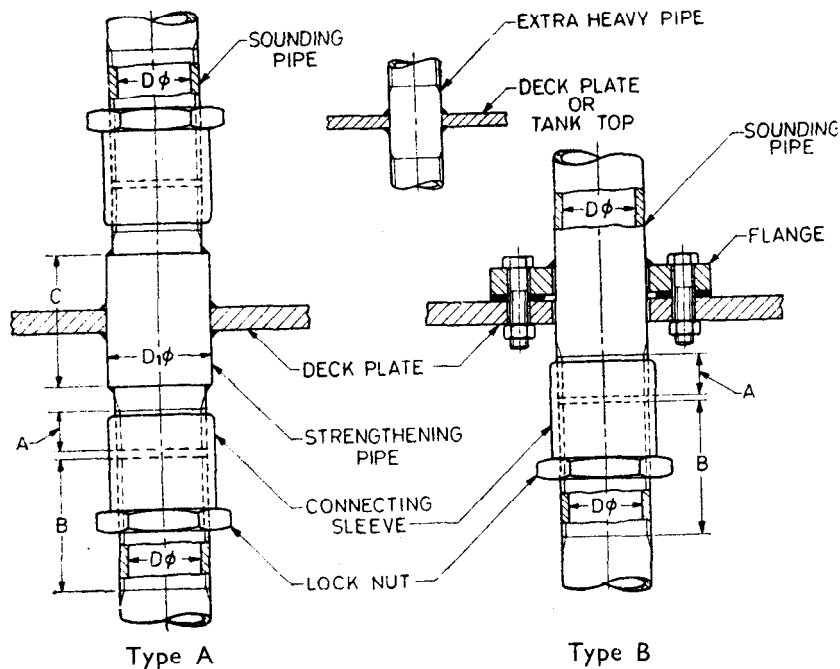


NOMINAL BORE	A	B	C	D.
D				
32	22	64	90	51
40	25	80	90	57
50	28	90	90	70
65	32	105	90	88.9

TABLE 2 DETAILS OF SOUNDING PIPE ATTACHMENT IN WAY OF INTERMEDIATE DECK

(Clause 4.4)

(All dimensions in millimetres)

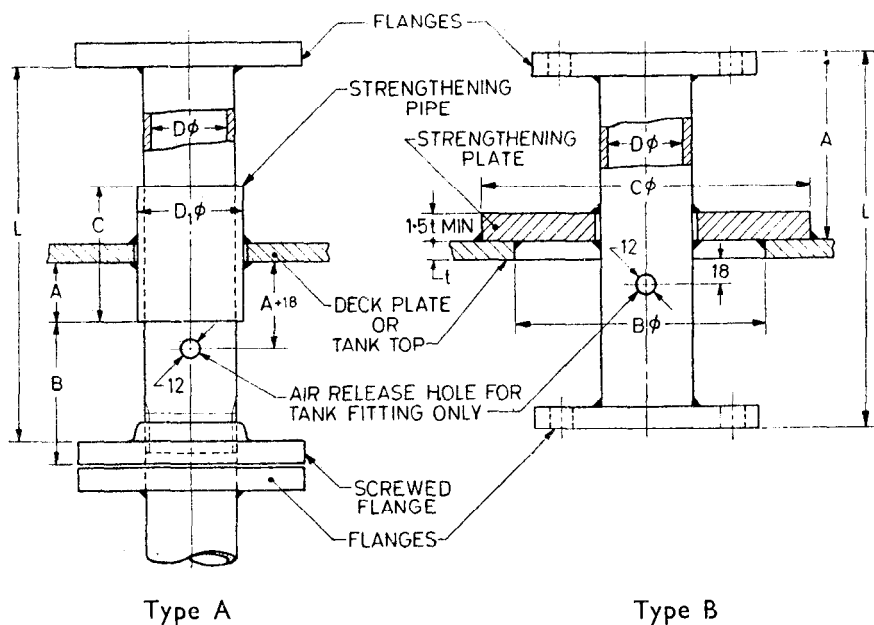


Nominal Bore <i>D</i>	TYPE A				Nominal Bore <i>D</i>	TYPE B	
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i> ₁		<i>A</i>	<i>B</i>
40	25	80	90	57	32	25	80
50	28	90	90	70	40	25	80
65	32	105	90	88.9	50	28	90
					65	32	105

TABLE 3 DETAILS OF SOUNDING PIPE ATTACHMENT IN WAY OF DECK OR TANK TOP

(Clause 4.5)

(All dimensions in millimetres)

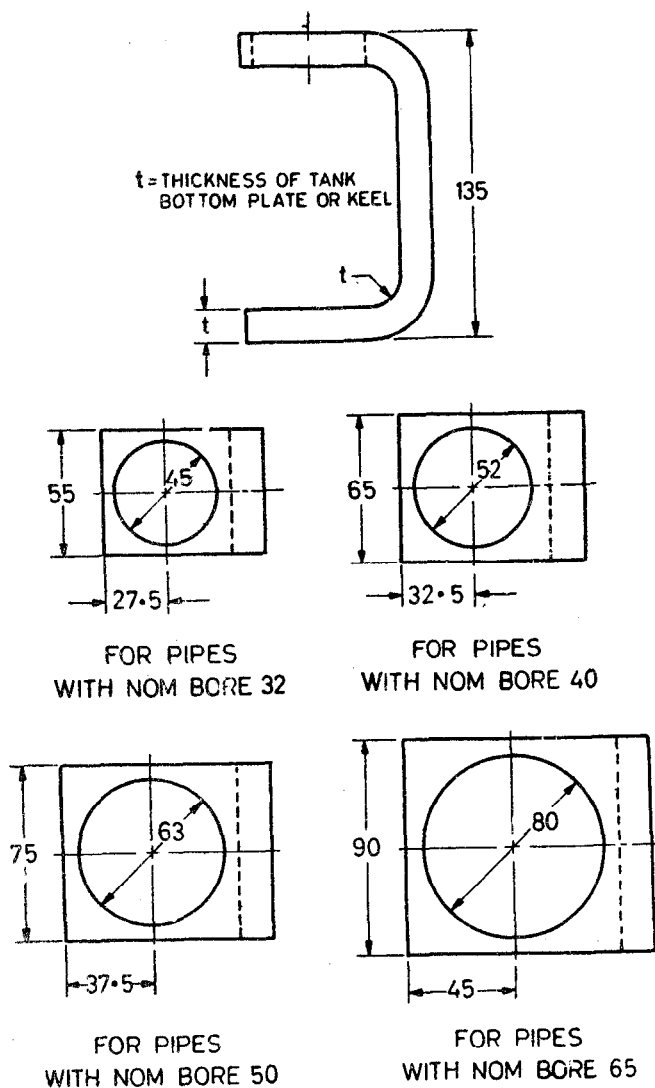


Type A

Type B

TYPE A						TYPE B				
Nominal Bore D	A	B	C	L	D ₁	Nominal Bore D	A	B	C	L
40	40	60	90	200	57	40	100	155	205	200
50	40	85	90	250	70	50	125	170	220	250
65	40	85	90	250	88.9	65	125	190	240	250

NOTE — Air release hole for tank top fitting to be drilled.



All dimensions in millimetres.

FIG. 4 DETAIL OF STRIKER PLATE WITH GUIDE

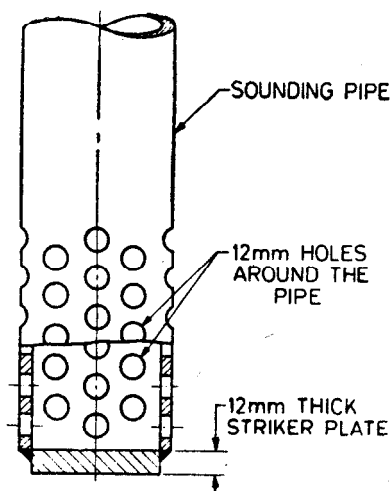
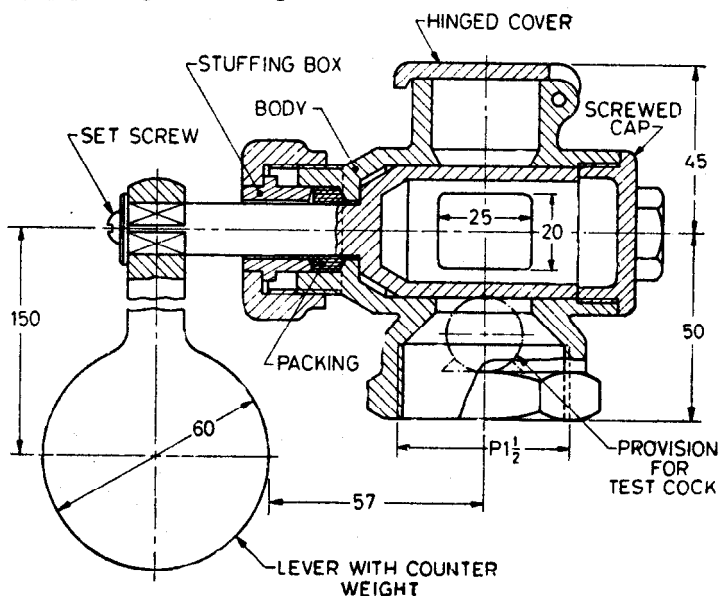


FIG. 5 DETAIL OF PERFORATED SOUNDING PIPE WITH CLOSE END

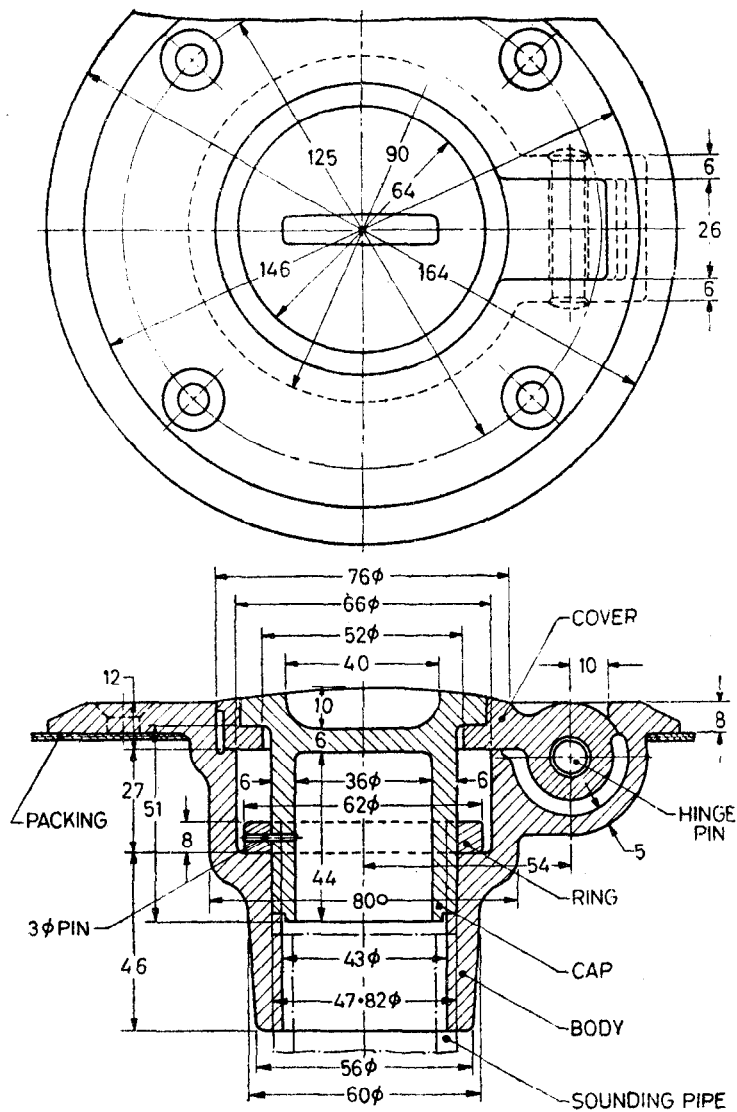
4.9 The assembly of self-closing cock with parallel plug fitted to head of sounding pipe is given in Fig. 6.



All dimensions in millimetres.

FIG. 6 ASSEMBLY OF SELF-CLOSING COCK WITH PARALLEL PLUG

4.10 The dimensions of flush deck fittings with pilfer proof cap fitted to head of sounding pipe shall be as shown in Fig. 7.



All dimensions in millimetres.

FIG. 7 DIMENSIONS OF FLUSH DECK FITTINGS WITH PILFER-PROOF CAP

5. TOLERANCES

5.1 The tolerance on all dimensions shall be according to coarse series of IS: 2102-1962*.

6. MARKING

6.1 The sounding pipes may be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

APPENDIX A

(Clause 0.3)

GUIDE FOR SELECTION AND INSTALLATION OF SOUNDING PIPES

A-1. Openings of sounding pipes shall be provided with satisfactory arrangements to prevent the free entry of water.

A-2. In all cargo spaces, sounding pipes shall be well protected and in coal bunkers protection shall be of steel.

A-3. Provision shall be made for sounding all tanks and the bilges of those compartments which are not readily accessible.

A-4. The soundings shall be taken as near the suction pipes as practicable.

A-5. Every fuel oil tank, all tanks forming part of the structure of the ship and all watertight compartments not being part of machinery space shall have sounding pipes.

*Recommendations for machining deviations for dimensions without specified tolerances.

A-6. Sounding pipes, from double bottom tanks and bilge spaces of cargo holds, should be led to positions above the bulkhead deck and shall be accessible at all times.

A-7. These pipes should be as straight as practicable and if curved to suit the structure of the ship, the curvature shall be sufficiently easy to permit the ready passage of the sounding rod or chain. The curvature of the pipe shall not be less than 10 times the diameter and the angle of bend shall not exceed 30 degrees.

A-8. Name plates shall be affixed to the upper ends of all sounding pipes.

A-9. Sounding pipes shall not terminate in a passenger or crew space nor in any space which is not efficiently ventilated.

A-10. In machinery spaces and tunnels where it is not always practicable to extend the sounding pipes as mentioned in **A-6** short sounding pipes extending to readily accessible positions above the platform may be fitted, provided those to fuel oil and lubricating oil tanks are not situated adjacent to boilers or electric generators or motors, and are of the self closing type with parallel plugs.

A-11. Short sounding pipes to tanks other than oil tanks shall be fitted with shut-off cocks or with screw caps attached to the pipes by chains.

A-12. In passenger ships, short sounding pipes should be used only for sounding coffer dams and double bottom tanks situated in the machinery space and in all cases shall be fitted with self-closing cocks.

A-13. When gauge glasses are used for indicating the level of liquid in tanks containing lubricating oil, fuel oil or other inflammable liquid, the glasses shall be of heat resisting quality adequately protected from mechanical damage and fitted with self-closing valves at the lower ends and at the top ends when these are connected to the tanks below the maximum liquid level.

A-14. Sounding pipes to oil compartment shall not terminate within refrigerated cargo chambers or in the fan and battery rooms for these chambers, or in enclosed spaces from which access is provided to refrigerated cargo chambers or their fan and battery rooms, when it is practicable.

A-15. Where these sounding pipes terminate in such spaces, as mentioned in **A-14**, they shall be fitted with self closing cocks having parallel plugs.

A-16. Sounding pipes shall have a bore not less than 32 mm. All sounding pipes whether for compartments or tanks, which pass through refrigerated spaces, or the insulation thereof, in which the temperatures contemplated are 0°C or below shall not be less than 65 mm bore.

A-17. All pipes which pass through chambers intended for the carriage or storage of refrigerated products shall be well insulated.

A-18. Where such pipes pass through chambers intended for a temperature of 0°C or below they shall also be insulated from the steel structure except in positions where the temperature of the structure is mainly controlled by the external temperature and will normally be above freezing point. Pipes passing through a deck plate within the ship side insulation, where the deck is fully insulated below and has an insulation ribband on top, shall be attached to the deck plating.

A-19. In the case of pipes adjacent to the shell plating, metallic contact between the pipes and the shell plating or frames shall be arranged as far as practicable.

A-20. Elbow sounding pipes shall not be used for deer tanks unless the elbows and pipes are situated within closed coffer dams or within tanks containing similar liquids.

A-21. Elbow may, however, be fitted to other tanks and may be used for sounding bilges, provided it is not practicable to lead them direct to the tanks or compartments.

A-22. The elbows shall be of heavy construction and adequately supported.

A-23. In passenger ships, elbow sounding pipes shall not be used.

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